

AMENDMENTS TO THE CLAIMS

1. **(Original)** A method of transporting information in a telecommunications network having a plurality of network elements, the method comprising the acts of:
 - (a) transporting a first frame from a first network element;
 - (b) receiving said first frame in a second network element, in the second network element:
 - (i) relocating information from a first set of byte locations of said first frame to a second set of byte locations of another frame;
 - (ii) transporting said another frame to a third network element;
 - (c) receiving said another frame in said third network element.
2. **(Original)** The method of claim 1 wherein said first frame and said another frame are SONET frames.
3. **(Original)** The method of claim 2 wherein said first set of byte locations is in an overhead section of a SONET frame.
4. **(Original)** The method of claim 2 wherein said second set of byte locations is in an overhead section of a SONET frame.
5. **(Original)** The method of claim 3 wherein said overhead section is a section overhead.
6. **(Original)** The method of claim 4 wherein said overhead section is a line overhead.
7. **(Original)** The method of claim 5 wherein said first set of byte locations consists of data communications channels in said section overhead.
8. **(Original)** The method of claim 6 wherein said second set of byte locations consists of data communications channels in said line overhead.

9. **(Original)** The method of claim 2 wherein said information is network management information.
10. **(Original)** The method of claim 9 wherein said network management information is in accordance with a protocol selected from a group consisting of Open Systems Interconnection Standard (OSI) and Transport Control Protocol/Internet Protocol (TCP/IP).
11. **(Original)** A computer useable medium comprising:
computer readable instructions for receiving a first SONET frame;
computer readable instructions for moving information from a first set of byte locations of said first SONET frame to a second set of byte locations of a second SONET frame; and
computer readable instructions for transmitting said second SONET frame.
12. **(Original)** The computer useable medium of claim 11 wherein said first set of byte locations consists of data communications channels in a section overhead.
13. **(Original)** The computer useable medium of claim 11 wherein said second set of byte locations consists of data communications channels in a line overhead.
14. **(Original)** A method of transporting information in a SONET network comprising the acts of:
(a) transporting a first SONET frame from a first network element to a second network element;
(b) in a second network element:
(i) moving a network management information from a section overhead of said first SONET frame to a line overhead of a second SONET frame;
(ii) transporting said second SONET frame to a third network element.

15. **(Original)** The method of claim 14 further comprising the acts of:
- (c) in the third network element:
 - (i) moving said network management information from the line overhead of said second SONET frame to a section overhead of a third SONET frame;
 - (ii) transporting said third SONET frame to a fourth network element.
16. **(Original)** The method of claim 14 further comprising the acts of:
- (c) in the third network element:
 - (i) moving said network management information from the line overhead of said second SONET frame to a line overhead of a third SONET frame;
 - (ii) transporting said third SONET frame to a fourth network element.
- 17-29. Cancelled.
30. **(Previously Presented)** An apparatus for transporting network management information in a telecommunications network having a plurality of network elements, comprising:
- a first network element comprising:
 - a first line interface to receive a first frame including said network management information; and
 - a cross-connect to relocate said network management information from a first set of byte locations of said first frame to a second set of byte locations of a second frame.
31. **(Previously Presented)** The apparatus of claim 30 further comprising:
- a second network element comprising:
 - a first line interface to receive said second frame; and
 - a cross-connect to relocate said network management information from said second set of byte locations of said second frame to said first set of byte locations.

32. **(New)** A network device comprising:
a cross-connect, wherein
said cross-connect is configured to receive a first frame and a second frame,
said first frame and said second frame are time-division multiplexed frames, and
said cross-connect is configured to relocate network management information
from a first set of byte locations of a first frame to a second set of byte
locations of a second frame.
33. **(New)** The network device of claim 32, further comprising:
a control vector memory, wherein
said cross-connect is configured to receive a plurality of time slots,
said time slots comprise said first frame and said second frame, and
said control vector memory is coupled to control said cross-connect by virtue of
being configured to cause said cross-connect to cross-connect said time
slots.
34. **(New)** The network device of claim 33, wherein said cross-connect comprises:
a plurality of TDM processors, wherein
said control vector memory is coupled to control each of said TDM processors by
virtue of being configured to cause said each of said TDM processors to
select at least one of said time slots.
35. **(New)** The network device of claim 34, wherein said each of said TDM processors
comprise:
an output interface; and
a multiplexer, wherein
an output of said multiplexer is coupled to said output interface, and
said control vector memory is coupled to control said multiplexer.

36. **(New)** The network device of claim 34, further comprising:
a plurality of input buffers, wherein
each of said input buffers is coupled to at least one of said TDM processors,
said control vector memory is coupled to control said each of said input buffers,
said cross-connect is configured to receive a plurality of incoming time slots,
said cross-connect is configured to output a plurality of outgoing time slots,
said input buffers are configured to allow said incoming time slots to be
sequentially written into said input buffers, and
said input buffers are configured to allow said outgoing time slots to be randomly
read from said input buffers.
37. **(New)** The network device of claim 36, wherein said each of said TDM processors
comprise:
a multiplexer, wherein
said control vector memory is coupled to control said multiplexer to select an
output of one of said input buffers.
38. **(New)** The network device of claim 32, further comprising:
a message router, wherein
said message router is configured to extract and route said network management
information, and
an output of said message router is coupled to a first input of said cross-connect.
39. **(New)** The network device of claim 38, further comprising:
a timing, communication, and control (TCC) processor, wherein
said TCC processor comprises said cross-connect, said control vector memory
and said message router.
40. **(New)** The network device of claim 39, wherein
an output of said cross-connect is coupled to an output of said TCC processor,
a second input of said cross-connect is coupled to an input of said TCC processor, and
an input of said message router is coupled to said input of said TCC processor.

41. (New) The network device of claim 40, further comprising:
a first system communications link (SCL) bus, coupled to said input of said TCC processor, and
a second SCL bus, coupled to said output of said TCC processor, wherein
said cross-connect is configured to receive a plurality of incoming time slots via said first SCL bus,
said cross-connect is configured to output a plurality of outgoing time slots via said second ACL bus.
42. (New) The network device of claim 40, further comprising:
a control vector memory, wherein
said control vector memory is coupled to control said cross-connect, and
said control vector memory is configured to cause said cross-connect to control a cross-connection of a plurality of said time slots.
43. (New) The network device of claim 42, wherein
said control vector memory is configured to cause said cross-connect to control said cross-connection of said plurality of said time slots by virtue of being configured to cause said cross-connect to select one of said first input and said second input.
44. (New) The network device of claim 42, wherein said cross-connect comprises:
a plurality of TDM processors, wherein
each of said TDM processors is configured to select at least one of said time slots,
and
said control vector memory is coupled to control each of said TDM processors.
45. (New) The network device of claim 44, further comprising:
a plurality of input buffers, wherein
said each of said TDM processors comprise
an output interface; and
a multiplexer,
an output of said multiplexer is coupled to said output interface,

said control vector memory is coupled to control said multiplexer,
each of said input buffers is coupled to at least one of said TDM processors,
said control vector memory is coupled to control said each of said input buffers,
and
said control vector memory is coupled to control said multiplexer to select an
output of one of said input buffers.

46. (New) A network device comprising:
a cross-connect, wherein
said cross-connect comprises
a plurality of TDM processors, and
a plurality of input buffers,
said control vector memory is coupled to control each of said TDM processors,
and
an output of each of said input buffers is coupled to an input of at least one of said
TDM processors.
47. (New) The network device of claim 46, wherein
said cross-connect is configured to receive a first frame and a second frame,
said first frame and said second frame are time-division multiplexed frames, and
said cross-connect is configured to relocate network management information from a first
set of byte locations of a first frame to a second set of byte locations of a second
frame.
48. (New) The network device of claim 46, wherein said each of said TDM processors
comprise:
an output interface; and
a multiplexer, wherein
an output of said multiplexer is coupled to said output interface, and
an input of said multiplexer is coupled to at least one of said input buffers.

49. (New) The network device of claim 48, further comprising:
a control vector memory, wherein
said control vector memory is coupled to control said cross-connect
50. (New) The network device of claim 49, wherein
said control vector memory is coupled to control said cross-connect by virtue of being
coupled to control said multiplexers and said input buffers.
51. (New) The network device of claim 49, further comprising:
a message router, wherein
an output of said message router is coupled to a first input of said cross-connect.
52. (New) The network device of claim 50, further comprising:
a timing, communication, and control (TCC) processor, wherein
said TCC processor comprises said cross-connect, said control vector memory
and said message router.
53. (New) The network device of claim 52, wherein
an output of said cross-connect is coupled to an output of said TCC processor,
a second input of said cross-connect is coupled to an input of said TCC processor, and
an input of said message router is coupled to said input of said TCC processor.
54. (New) The network device of claim 53, further comprising:
a first system communications link (SCL) bus coupled to said input of said TCC
processor, and
a second SCL bus coupled to said output of said TCC processor.
55. (New) The network device of claim 53, wherein
said control vector memory is configured to cause said cross-connect to select one of said
first input and said second input.